

ART 31 AMENDT

**CLAIMS**

1. A system for an apparatus of the type adapted to treat substrates and/or wafers, the system comprising a stationary base element and a movable support for at least one substrate or at least one wafer, the support being rotatable above the element about a stationary axis, a chamber being defined between the element and the support, at least one duct being provided for the admission of at least one gas-flow to the chamber in order to raise the support, characterized in that at least one outlet of said at least one duct opens into the chamber and is configured in a manner such that the emerging gas-flow is skew with respect to the axis of rotation of the support so as to convert the flow of gas into the chamber into rotation of the support.

**BEST AVAILABLE COPY**

ART 3A EPO

13.2

EPO - DG 1  
11.05.2004

(108)

CLAIMS

~~1. A system for an apparatus of the type adapted to treat substrates and/or wafers, the system comprising a stationary base element and a movable support for at least one substrate or at least one wafer, the support being rotatable above the element about a stationary axis, characterized in that a chamber is provided, defined between the element and the support, in that at least one duct is provided for the admission of at least one gas-flow to the chamber in order to raise the support, and in that the system comprises means for converting the flow of gas into the chamber into rotation of the support.~~

2. A system according to Claim 1 in which the chamber is substantially closed both when the support is stationary and when the support is in motion.

~~3. A system according to Claim 1 or Claim 2 in which said means comprise at least one duct outlet for a gas-flow, in which said outlet opens into the chamber and is configured in a manner such that the emerging gas-flow is skew relative to the axis of rotation of the support.~~

~~3. A system according to Claim 3 in which said means comprise two duct outlets for two gas-flows, in which said outlets open into the chamber in positions that are preferably symmetrical with respect to the axis of rotation of the support and are configured in a manner such that the two emerging gas-flows are skew and preferably symmetrical with respect to the axis of rotation of the support.~~

~~4. A system according to any one of the preceding claims in which said means comprise at least one duct outlet for a gas-flow, in which said outlet opens into the chamber and is configured in a manner such that the emerging gas-flow is substantially parallel to the axis of rotation of the support.~~

~~5. A system according to Claim 4 in which said means comprise two duct outlets for two gas-flows, in which said outlets open into the chamber in positions that are preferably symmetrical with respect to the axis of rotation of the support and the outlets are configured in a manner such that the two emerging gas-flows are substantially parallel to the axis of rotation of the support.~~

Best Available Copy

AVV 24/05/04

6. A system according to Claim <sup>5</sup> or Claim <sup>6</sup> in which the surface of the support which delimits the chamber is shaped in a manner such that a gas-flow parallel to the axis of rotation of the support transmits a tangential force to the support.

7. A system according to any one of the preceding claims, in which said means comprise at least one channel which is defined between the element and the support and is in communication with the chamber, and which has a shape and size such that the gas that is present in the chamber as a result of the inward flow of gas flows through the channel as a result of the pressure in the chamber and causes the support to rotate as a result of the fluid-dynamic drive.

8. A system according to Claim <sup>7</sup> in which said means comprise a plurality of channels which are defined between the element and the support and are in communication with the chamber, and which are positioned preferably symmetrically with respect to the axis of rotation of the support and have shapes and sizes such that the gas that is present in the chamber as a result of the inward gas-flow flows through the channels as a result of the pressure in the chamber and causes the support to rotate as a result of the fluid-dynamic drive.

9. A system according to Claim <sup>8</sup> or Claim <sup>9</sup> in which the depth of at least one of the channels reduces along its extent.

10. A system according to Claim <sup>7</sup> or Claim <sup>9</sup> or Claim <sup>10</sup> in which the chamber has a substantially cylindrical shape and the channels are substantially straight and tangential to the profile of the chamber.

11. A system according to any one of the preceding claims in which the chamber is formed entirely in the element.

12. A system according to any one of Claims <sup>8</sup> to <sup>11</sup> in which the channels are formed entirely in the element.

13. A system according to Claims <sup>11</sup> and <sup>12</sup> in which the element has a circular recess adapted to house the support rotatably, in which the chamber is formed in the element in a central zone of the recess, and in which the channels are formed in the element in a peripheral zone of the recess.

Best Available Copy

ART 21

15

~~14~~ 15. A system according to any one of the preceding claims in which a pin/hole pair is provided on the element/support pair, for the mechanical restraint of the rotation of the support above the element.

~~15~~ 16. A system according to any one of the preceding claims, characterized in that it is substantially symmetrical with respect to the axis of rotation of the support.

~~16~~ 17. A system according to any one of the preceding claims in which the element is adapted to constitute a slide of a treatment chamber of a treatment apparatus.

~~17~~ 18. A system according to any one of the preceding claims in which the support is adapted to also act as a susceptor.

~~18~~ 19. A reactor for the epitaxial growth of semiconductor materials on substrates, characterized in that it comprises a support system for substrates according to any one of Claims 1 to ~~18~~<sup>17</sup>.

~~19~~ 20. An apparatus for the thermal treatment of wafers at high temperature, characterized in that it comprises a support system for wafers according to any one of Claims 1 to ~~18~~<sup>17</sup>.

Best Available Copy